IN-SEMESTER EXAMINATION-I
T.E. (Semester-VI)
SUBJECT – Software Engineering

Branch: Information Technology
Div.: ALL
Duration: 60 Minutes
Date: 11/03/202
Timing: 12:00 TO 1:00 PM
Maximum Marks: 2

Instructions –

1. All questions are compulsory.
2. Assume suitable data wherever necessary and state the assumptions made.
3. Diagrams / sketches should be given wherever necessary.
4. Use of logarithmic table, drawing instruments and non-programmable calculators is permitted.
5. Figures to the right indicate full marks.

Q.1		Answer any 5 of the following questions	Marks	Course Outcomes	Learning Levels
	a.	Define software and list its key characteristics.	2	1	R
	b.	List different umbrella activities in software development.	2	1	R
	c.	Write evolving role of software.	2	1	U
	d.	List different Prescriptive & Specialized Process Models? List all.	2	2	U
	e.	Write agile manifesto.	2	2	U
	f.	List activities to be conducted for Requirement Elicitation and Analysis.	2	3	R
	g.	List and explain types of requirements in software engineering.	2	3	R
Q.2	a.	Explain what agility means and explore the core principles behind it in the context of managing projects and developing software.	5	2	U
		OR			
	b.	Provide a brief overview of the Component Assembly Model. Explain its fundamental concepts how components are assembled to create software applications. Highlight the main features and benefits of this model in a concise manner.	5	2	A
Q.3	a.	A library management system is being developed to handle book records, user management, and borrowing/return transactions. The estimated Lines of Code (LOC) for different modules are: Book Management: 10,000 LOC User Management: 8,000 LOC Borrow/Return System: 12,000 LOC Given Data: Average Productivity = 600 LOC per Person-Month Effort Adjustment Factor (EAF) = 1.1 Cost Per Person-Month = ₹50,000 Find: Total Estimated Effort (in Person-Months) Estimated Project Duration (in Months) Total Development Cost (in Rupees)	5	3	A
		OR			
	b.	Analyze the key differences between the Basic, Intermediate, and Detailed COCOMO models in terms of their estimation approach, accuracy, and applicability.	5	3	E

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Estd. 2001

IN-SEMESTER EXAMINATION-II

TE (Semester-VI)

SUBJECT – Software Engineering

Date: 16/4/20

Branch: IT
Div.: ALL
Duration: 60 Minutes
Timing: 10:00 AM to 11:00 A
Maximum Marks:

Instructions –

1. All questions are compulsory.
2. Assume suitable data wherever necessary and state the assumptions made.
3. Diagrams / sketches should be given wherever necessary.
4. Use of logarithmic table, drawing instruments and non-programmable calculators is permitted.
5. Figures to the right indicate full marks.

Q.1		**Answer any 5 of the following questions**	Marks	Course Outcomes	Learni Level
	a.	List different Design Principles. Explain any one.	2	4	U
	b.	Define the term "Design Process" in software engineering.	2	4	U
	c.	State the goal of Data Design?	2	4	U
	d.	Define Reactive Risk Strategy and its significance in risk management.	2	5	R
	e.	List different categories of software risks? Explain any one.	2	5	R
	f.	List types of testing executed under white box testing & black box testing.	2	6	U
	g.	Explain Equivalence Partitioning in software testing, and how does it help reduce the number of test cases?	2	6	R

Q.2	a.	Draw Control Flow Graph, Find independent Path, Compute Cyclomatic Complexity for the following code:
		If(c1 or c2)
		While(c3) S1;
		Else
		do s2; while(c4);
		s3;
			5	6	E

		OR			
	b.	Analyze the impact of poor User Interface Design on user satisfaction and system usability.	5	4	AN
Q.3	a.	Identify any Two Risks of your software Project & Build the Risk Table for the same.	5	5	A
		OR			
	b.	RMMM model is important for various software projects. How does it help software developers	5	5	A

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END SEMESTER EXAMINATION, MAY 2025
T.E. SEMESTER VI (CBCGS-HME 2023)

Branch:	**IT**	**Q.P. Code:**	**E665RM253-2**
Subject:	**Software Engineering**	**Duration:**	**2 hours**
Subject Code:	**PCC- IT 602**	**Max. Marks:**	**60**

Instructions: **1. All sections are compulsory**
2. Figures to the right indicate full marks.
3. Assume suitable data if necessary and state the assumptions clearly.

Section-I **Short Answer Questions (Answer any 05 questions out of 06)** **(10 Marks)**
(Fundamental, Core Types)

Q. No.		Marks	CO	RBT Level	PI
1	Which two tests are conducted for User Acceptance testing? Explain Both.	2	6	U	7.4
2	List different categories of software risks? Explain any one.	2	5	R	1.7.1
3	What is the significance of modularity in Component-Level Design?	2	4	A	9.6.1
4	Discuss different origin of changes occurring during software product development process.	2	3	A	1.6.1
5	Define concurrent development in software engineering.	2	2	R	3.5
6	List different umbrella activities in software development.	2	1	R	2.8.1

Section-II **Descriptive Answer Questions(Answer any 04 out of 06)** **(20 Marks)**
(Descriptive, Comprehension Types)

1	What is the need of Integration testing? Differentiate between Top Down Integration & Bottom Up Integration testing.	5	6	U	3.5
2	How can we use Risk paradigm to do risk management	5	5	AN	1.7.1
3	Analyze the impact of poor User Interface Design on user satisfaction and system usability.	5	4	AN	11.6
4	A library management system is being developed to handle book records, user management, and borrowing/return transactions. The estimated Lines of Code (LOC) for different modules are: Book Management: 10,000 LOC User Management: 8,000 LOC Borrow/Return System: 12,000 LOC Given Data: Average Productivity = 600 LOC per Person-Month Effort Adjustment Factor (EAF) = 1.1 Cost Per Person-Month = ₹50,000 Find: Total Estimated Effort (in Person-Months) Estimated Project Duration (in Months) Total Development Cost (in Rupees)	5	3	A	3.8

5	Describe the Concurrent Process Model, outlining its basic features and how it involves simultaneous execution of tasks in software development	5	2	R	3.5
6	Classify different types of software and illustrate the distinction between system software and application software with real-world examples.	5	1	A	2.5.1
Section-III	**Long Answer Question (Answer any 03 out of 05) (Application, Analytical, Evaluation, Design Type)**				**(30 Marks)**
1	Imagine testing a weather forecasting application. Develop a black box testing plan focusing on verifying the accuracy of weather predictions, user interface responsiveness, and real-time data updates.	10	6	C	1.7.1
2	You are managing a software project, and you've identified the following risks in different categories. For each risk category, the likelihood (P), impact (I), and risk score (P * I) are provided. You need to analyze how reactive and proactive strategies would impact the project in terms of handling these risks. Here is the risk data: Task 1: Calculate the Risk Score for Each Risk Category Task 2: Prioritize the Risks Task 3: Suggest Mitigation Strategies	10	5	E	3.5
3	Analyze the role of software architecture and control hierarchy in designing scalable and maintainable software systems. Evaluate how these concepts contribute to the overall structure and functionality of a system.	10	4	AN	3.5
4	Compose a concise overview of Software Requirement Specifications (SRS), emphasizing the key considerations involved in creating an SRS document for a project.	10	3	AN	2.8.2
5	Which software development approach is best suited for easily adaptable to the changes may appear during development process? Explain any one model of that software development approach.	10	2	AN	9.6.1

Risk Category	Likelihood (P)	Impact (I)	Risk Score (P × I)
Technical (T)	0.3	8	
Operational (O)	0.2	6	
Schedule (S)	0.4	7	
Budget (B)	0.6	5	
Environmental (E)	0.5	4	